

Amendments to the Claims

Please amend the Claims as follows:

1. (Cancelled)
2. (Currently amended) An umbrella as claimed in claim 674, wherein the inside of the or each pocket, at least opposite to the opening, is closed to provide a bearing surface upon which the force spreader contacts.
3. (Currently amended) An umbrella as claimed in claim 674 or claim 2, comprising a plurality of separate pockets spaced about the canopy's periphery, wherein one force spreader is received within each pocket.
4. (Original) An umbrella as claimed in claim 3, wherein a closed edge of each pocket lies along the periphery of the canopy and the opening in each pocket is in the form of a slit substantially aligned with its rib member.
5. (Previously presented) An umbrella as claimed in claim 3, wherein the periphery of each pocket is closed.
6. (Currently amended) An umbrella as claimed in claim 674, further comprising a secondary slider movable along the shaft between said slider and the first end of said shaft, and a plurality of secondary struts each pivotally connected between said secondary slider and a respective strut.
7. (Original) An umbrella as claimed in claim 6, wherein said secondary struts are about half as long as the struts.

8. (Original) An umbrella as claimed in claim 6, wherein said secondary struts are about 15/26 times the length of the struts.

9. (Previously presented) An umbrella as claimed in claim 6, wherein each secondary strut is connected to a strut a pre-determined distance from its connection with said slider, wherein said pre-determined distance is substantially equal to the length of said secondary strut.

10. (Previously presented) An umbrella as claimed in claim 6, wherein the slider comprises a spacer above the position on the slider at which the struts are connected and which, during erection of the umbrella, contacts and pushes the secondary slider and once the umbrella has reached a fully erected state, fixes the spacing between the slider and secondary slider.

11. (Previously presented) An umbrella as claimed in claim 6, wherein during erection of the umbrella, a holder temporarily holds the secondary slider in position at a predetermined location along the shaft before releasing the secondary slider once the slider has moved a predetermined distance towards the secondary slider.

12. (Currently amended) An umbrella comprising:

a shaft,

a plurality of rib members, first ends of said rib members spaced about and pivotally connected at or adjacent a first end of said shaft,

a canopy comprising one or more pockets at or adjacent to the periphery of the canopy wherein an opening or openings in the or each pocket is accessible from the direction of the central portion of the canopy,

a slider movable along the shaft to open or collapse the umbrella,

a plurality of struts, each of which is pivotally connected between the slider and a rib member,

a deployable force spreader provided on a second end of each rib member, the force spreader received within a of the pockets of the canopy, and

a secondary slider movable along the shaft between said slider and the first end of said shaft, and a plurality of secondary struts each pivotally connected between said secondary slider and a respective strut,

~~An umbrella as claimed in claim 6,~~ wherein each rib member comprises an inner rod extending between the shaft and the force spreader and an outer tube slidable on said inner rod wherein each outer tube is pivotally connected to a strut.

13. (Previously presented) An umbrella as claimed in claim 12, wherein each force spreader comprises a load spreading surface adapted to transfer radial force from the outer tube of said rib member to the periphery of said canopy via said pocket.

14. (Original) An umbrella as claimed in claim 13, wherein the amount of contact between said canopy and said load spreading surface increases during erection of said umbrella.

15. (Previously presented) An umbrella as claimed in claim 13, wherein said force spreader comprises two legs pivotally connected together at a pivot region and forming a substantially 'V' shape when said umbrella is in a collapsed state and wherein said legs are spread apart and substantially aligned during erection of said umbrella, the two legs and the pivot region forming said load spreading surface.

16. (Previously presented) An umbrella as claimed in claim 15, wherein the outer end of ~~an~~ each inner rod contacts the pivot region of a respective force spreader and the outer end of ~~an~~ each outer tube is connected to both of the legs of a respective force spreader.

In re the Application of GREIG REID BREBNER
Application No. 10/579,656
International Application No. PCT/NZ2004/000292
Docket No. 0074-542855

17. (Previously presented) An umbrella as claimed in claim 15, wherein the outer end of an each inner rod is received within a longitudinal bore provided in a stopper connected to or forming a part of the pivot region of a each force spreader.

18. (Previously presented) An umbrella as claimed in claim 15, wherein each force spreader comprises first and second spreading members, each pivotally connected to a respective pivotally connected leg and non-pivotally connected to a tube mounting hub of said force spreader, the tube mounting hub connected to the outer end of said outer tube, said inner rod passing through the tube mounting hub.

19. (Previously presented) An umbrella as claimed in claim 15, wherein said force spreader is formed from a plastic material and wherein living hinges form the pivotal connections therein.

20. (Previously presented) An umbrella as claimed in claim 12, wherein the inner rod comprises more than one abutable separate inner rod portions within an outer tube.

21. (Original) An umbrella as claimed in claim 20, wherein an inner rod portion furthest from the shaft has a lower weight per unit length than an inner rod portion closer to the shaft.

22. (Currently amended) An umbrella as claimed in claim 67~~4~~, wherein no more than six rib members are provided about said shaft.

23. (Original) An umbrella frame comprising:

a shaft,

a plurality of rib members, first ends of said rib members spaced about and pivotally connected at or adjacent a first end of said shaft,

a primary slider movable along the shaft to erect or collapse the umbrella frame,

a secondary slider movable along the shaft between the primary slider and the first end of the shaft,

a plurality of primary struts, each of which is pivotally connected between the primary slider and a rib member, and

a plurality of secondary struts, each of which is pivotally connected between the secondary slider and a primary strut,

wherein each rib member comprises an inner rod extending between the shaft and a force spreader and an outer tube slidable on said inner rod wherein each outer tube is pivotally connected to a respective primary strut.

24. (Previously presented) An umbrella frame as claimed in claim 23, wherein each force spreader is provided on a second end of each rib member.

25. (Previously presented) An umbrella frame as claimed in claim 23, wherein said secondary struts are about half as long as the primary struts.

26. (Previously presented) An umbrella frame as claimed in claim 23, wherein said secondary struts are about 15/26 times the length of the primary struts.

27. (Previously presented) An umbrella frame as claimed in claim 23, wherein each secondary strut is connected to a primary strut a pre-determined distance from its connection with said primary slider, wherein said pre-determined distance is substantially equal to the length of said secondary strut.

28. (Previously presented) An umbrella frame as claimed in claim 23, wherein the primary slider comprises a spacer above the position on the primary slider at which the primary struts are connected and which, during erection of the umbrella frame, contacts and pushes the secondary

slider and once the umbrella frame has reached a fully erected state, fixes the spacing between the primary slider and secondary slider.

29. (Previously presented) An umbrella frame as claimed in claim 23, wherein during erection of the umbrella frame, a holder temporarily holds the secondary slider in position at a predetermined location along the shaft before releasing the secondary slider once the primary slider has moved a predetermined distance towards the secondary slider.

30. (Cancelled)

31. (Previously presented) An umbrella frame as claimed in claim 29, wherein each force spreader comprises a load spreading surface adapted to transfer radial force from the outer tube of said rib member to the periphery of a canopy adapted to be supported by the umbrella frame.

32. (Original) An umbrella frame as claimed in claim 31, wherein the effective length or contact area of said load spreading surface increases during erection of said umbrella frame.

33. (Previously presented) An umbrella frame as claimed in claim 31, wherein each force spreader comprises two legs pivotally connected together at a pivot region and forming a substantially 'V' shape when said umbrella frame is in a collapsed state and wherein said legs are spread apart and substantially aligned during erection of said umbrella frame, the two legs and the pivot region forming said load spreading surface.

34. (Previously presented) An umbrella frame as claimed in claim 33, wherein the outer end of each inner rod contacts the pivot region of a respective force spreader and the outer end of each outer tube is connected to both of the legs of a respective force spreader.

35. (Previously presented) An umbrella frame as claimed in claim 33, wherein the outer end of each inner rod is received within a longitudinal bore provided in a stopper connected to or forming a part of the pivot region of a force spreader.

36. (Previously presented) An umbrella frame as claimed in claim 33, wherein each force spreader comprises first and second spreading members, each pivotally connected to a respective pivotally connected leg and non-pivotally connected to a tube mounting hub of said force spreader, the tube mounting hub connected to the outer end of said outer tube, said inner rod passing through the tube mounting hub.

37. (Previously presented) An umbrella frame as claimed in claim 33, wherein said force spreader is formed from a plastic material and wherein living hinges form the pivotal connections therein.

38. (Currently amended) An umbrella frame as claimed in claim ~~30~~ 29, wherein the inner rod comprises more than one abutable separate inner rod portions within an outer tube.

39. (Original) An umbrella frame as claimed in claim 38, wherein an inner rod portion furthest from the shaft has a lower weight per unit length than an inner rod portion closer to the shaft.

40. (Previously presented) An umbrella frame as claimed in claim 23, wherein no more than six rib members are provided about said shaft.

41. (Previously presented) An umbrella frame comprising:

a shaft,

a plurality of rib members spaced about said shaft, each rib member comprising a first portion pivotally connected at or adjacent a first end of said shaft and a second portion freely slidable relative to said first portion,

a slider movable along the shaft to erect or collapse the umbrella frame, and
a plurality of struts, each of which is pivotally connected between the slider and the
second portion of said rib member,

wherein a force spreader is provided on the end of each rib member furthest from the
shaft, and

the first portion of each rib member comprises an inner rod extending between the shaft
and a respective force spreader and an outer tube slidable on said inner rod wherein each outer
tube is pivotally connected to a strut.

42. (Previously presented) An umbrella frame as claimed in claim 41, further comprising a
secondary slider movable along the shaft between said slider and the first end of said shaft, and a
plurality of secondary struts each pivotally connected between said secondary slider and a
respective strut.

43. (Original) An umbrella frame as claimed in claim 42, wherein said secondary struts are
about half as long as the struts.

44. (Previously presented) An umbrella frame as claimed in claim 42, wherein said secondary
struts are about 15/26 times the length of the struts.

45. (Previously presented) An umbrella frame as claimed in claim 43, wherein each secondary
strut is connected to a strut a pre-determined distance from its connection with said slider,
wherein said pre-determined distance is substantially equal to the length of said secondary strut.

46. (Previously presented) An umbrella frame as claimed in claim 42, wherein the slider
comprises a spacer above the position on the slider at which the struts are connected and which,
during erection of the umbrella frame, contacts and pushes the secondary slider and once the

umbrella frame has reached a fully erected state, fixes the spacing between the slider and secondary slider.

47. (Previously presented) An umbrella frame as claimed in claim 42, wherein during erection of the umbrella frame, a holder temporarily holds the secondary slider in position at a predetermined location along the shaft before releasing the secondary slider once the slider has moved a predetermined distance towards the secondary slider.

48. (Cancelled)

49. (Cancelled)

50. (Previously presented) An umbrella frame as claimed in claim 41, wherein each force spreader comprises a load spreading surface adapted to transfer radial force from the outer tube of said rib member to the periphery of a canopy adapted to be supported by the umbrella frame.

51. (Original) An umbrella frame as claimed in claim 50, wherein the effective length or contact area of said load spreading surface increases during erection of said umbrella frame.

52. (Previously presented) An umbrella frame as claimed in claim 51, wherein each force spreader comprises two legs pivotally connected together at a pivot region and forming a substantially 'V' shape when said umbrella frame is in a collapsed state and wherein said legs are spread apart and substantially aligned during erection of said umbrella frame, the two legs and the pivot region forming said load spreading surface.

53. (Previously presented) An umbrella frame as claimed in claim 52, wherein the outer end of an inner rod contacts the pivot region of a force spreader and the outer end of an outer tube is connected to both of the legs of said force spreader.

In re the Application of GREIG REID BREBNER
Application No. 10/579,656
International Application No. PCT/NZ2004/000292
Docket No. 0074-542855

54. (Previously presented) An umbrella frame as claimed in claim 52, wherein the outer end of an inner rod is received within a longitudinal bore provided in a stopper connected to or forming a part of the pivot region of a respective force spreader.

55. (Previously presented) An umbrella frame as claimed in claim 52, wherein each force spreader comprises first and second spreading members, each pivotally connected to a respective pivotally connected leg and non-pivotally connected to a tube mounting hub of said force spreader, the tube mounting hub connected to the outer end of said outer tube, said inner rod passing through the tube mounting hub.

56. (Previously presented) An umbrella frame as claimed in claim 52, wherein said force spreader is formed from a plastic material and wherein living hinges form the pivotal connections therein.

57. (Currently Amended) An umbrella frame as claimed in claim ~~49~~ 41, wherein the inner rod comprises more than one abutable separate inner rod portions within an outer tube.

58. (Original) An umbrella frame as claimed in claim 57, wherein an inner rod portion furthest from the shaft has a lower weight per unit length than an inner rod portion closer to the shaft.

59. (Previously presented) An umbrella frame as claimed in claim 41, wherein no more than six rib members are provided about said shaft.

60. (Previously presented) An umbrella comprising a canopy supported by an umbrella frame as claimed in claim 23 or claim 41.

In re the Application of GREIG REID BREBNER
Application No. 10/579,656
International Application No. PCT/NZ2004/000292
Docket No. 0074-542855

61. (Previously presented) An umbrella as claimed in claim 60, wherein the canopy comprises one or more pockets at or adjacent to the periphery of the canopy wherein an opening or openings in the or each pocket is accessible from the direction of the central portion of the canopy.

62. (Previously presented) An umbrella as claimed in claim 61, wherein the inside of the or each pocket, at least opposite to the opening, is closed to provide a bearing surface upon which the force spreader contacts.

63. (Previously presented) An umbrella as claimed in claim 61, wherein a force spreader is provided on the end of each rib member furthest from the shaft, comprising a plurality of separate pockets spaced about the canopy's periphery, and wherein one force spreader is received within each pocket.

64. (Original) An umbrella as claimed in claim 63, wherein a closed edge of each pocket lies along the periphery of the canopy and the opening in each pocket is in the form of a slit substantially aligned with its rib member.

65. (Cancelled)

66. (Cancelled)

67. (Currently amended) An umbrella comprising:
a shaft,
a plurality of rib members, first ends of said rib members spaced about and pivotally connected at or adjacent a first end of said shaft,

a canopy comprising one or more pockets at or adjacent to the periphery of the canopy wherein an opening or openings in the or each pocket is accessible from the direction of the central portion of the canopy,

a slider movable along the shaft to open or collapse the umbrella,

a plurality of struts, each of which is pivotally connected between the slider and a rib member, and

a force spreader provided on a second end of each rib member, the force spreader received within one of the pockets of the canopy, comprising first and second legs pivotally connected at a pivot,

wherein the force spreader is deployable from a collapsed state wherein the legs of the force spreader are in a compressed state within the pocket to an expanded state wherein the legs of the force spreader are splayed about the pivot at or near the periphery of the canopy, the splayed legs forming a load bearing edge against the periphery of the canopy within the pocket to tension the canopy upon reconfiguring the umbrella from a collapsed state to an open state using the slider.

68. (Currently amended) An umbrella according to claim 67 wherein each rib member comprises a first member slidable relative to a second member, the second member being pivotally connected to the shaft, each force spreader being provided on an end of a respective first member, wherein movement of a first member relative to a respective second member away from the shaft deploys the force spreader to an expanded state.

69. (Previously presented) An umbrella according to claim 68 wherein the force spreader comprises a mounting hub for providing the force spreader on an end of a respective first member, first and second spreading members for bearing against an internal portion of a respective pocket when in the expanded state, and first and second legs coupled between the hub and first and second spreading members, wherein movement of a first member away from the shaft splays the spreading members via the hub and legs into the expanded state.

70. (Previously presented) An umbrella according to claim 69 wherein movement of the first member towards the shaft retracts the spreading members via the hub and legs into the collapsed state.

71. (New) An umbrella according to claim 67 wherein the pivot is supported at or near the periphery of the canopy directly or indirectly by the rib member between the splayed legs.

72. (New) An umbrella according to claim 67 wherein the legs extend either side of the pivot such that the load bearing edge extends continuously one leg to the other leg against the periphery of the canopy.

73. (New) An umbrella according to claim 67 wherein the load bearing edge is arc-shaped.